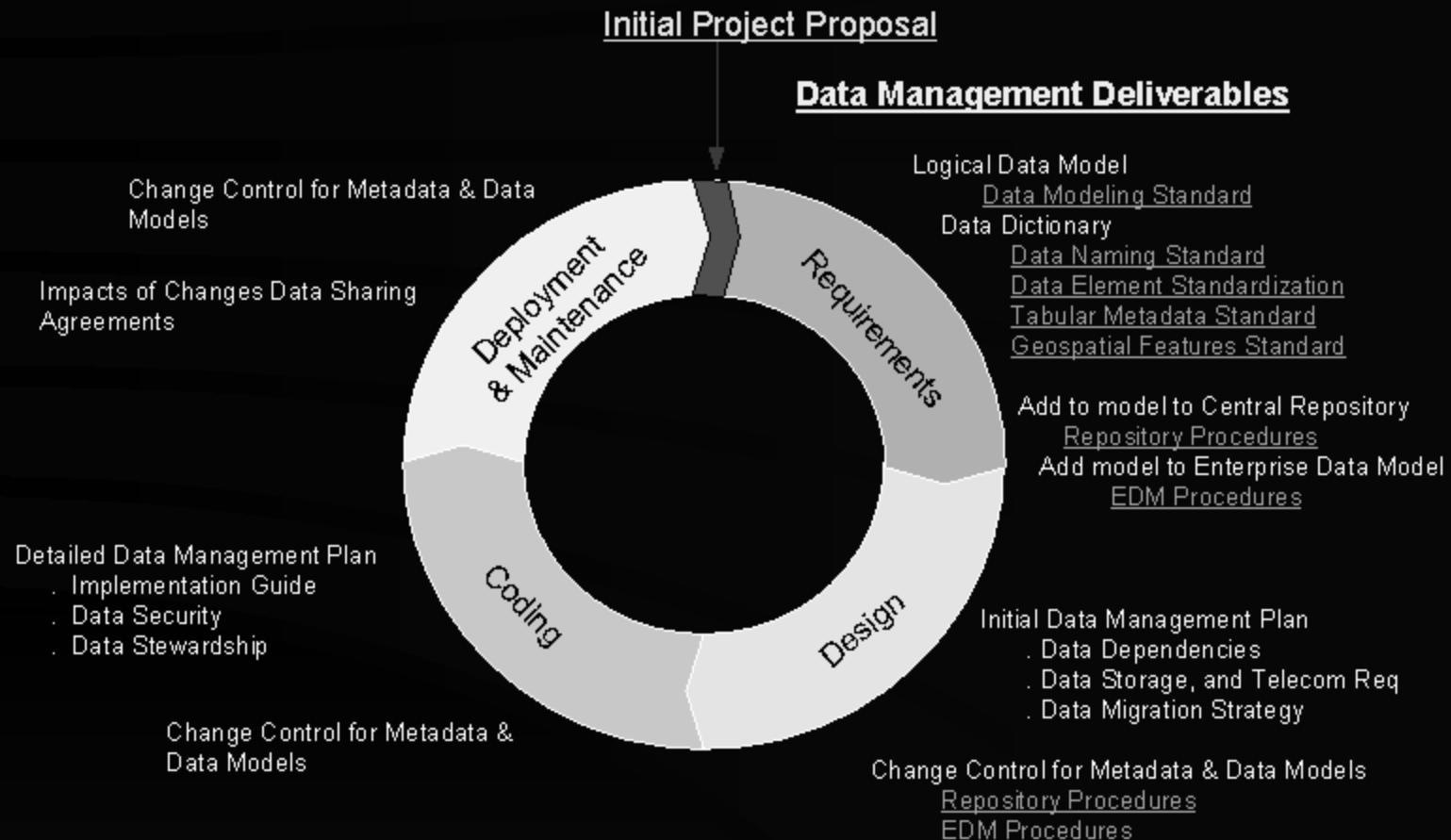# USDA Service Center Metadata
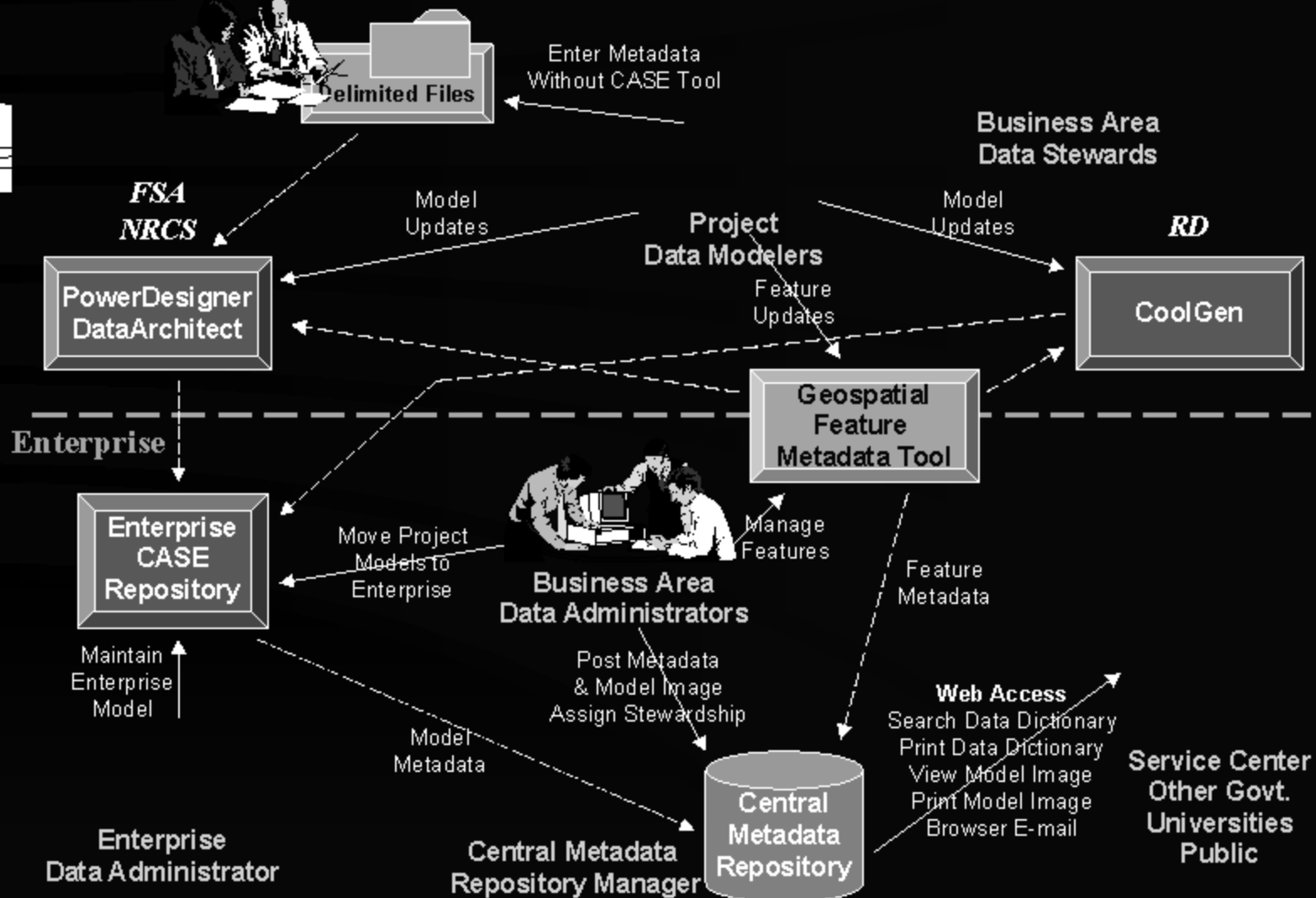## An Overview

# Current Data Team Focus

- Data management life cycle
- Data management standards
- Software development and metadata management tools
- Metadata repository management
- Data management roles and responsibilities
- Data warehouse strategy

# Data Management in the Project Lifecycle

Initial Project Proposal

**Data Management Deliverables**

Change Control for Metadata & Data Models

Impacts of Changes Data Sharing Agreements

Logical Data Model
    Data Modeling Standard
Data Dictionary
    Data Naming Standard
    Data Element Standardization
    Tabular Metadata Standard
    Geospatial Features Standard

Add to model to Central Repository
    Repository Procedures
Add model to Enterprise Data Model
    EDM Procedures

Deployment & Maintenance

Requirements

Coding

Design

Detailed Data Management Plan
. Implementation Guide
. Data Security
. Data Stewardship

Initial Data Management Plan
. Data Dependencies
. Data Storage, and Telecom Req
. Data Migration Strategy

Change Control for Metadata & Data Models

Change Control for Metadata & Data Models
    Repository Procedures
    EDM Procedures

# Metadata Categories

**Systems**

- Metadata about the data and software owned and used by a system

**Geospatial Feature Catalog**

- Metadata about geospatial features (maps)
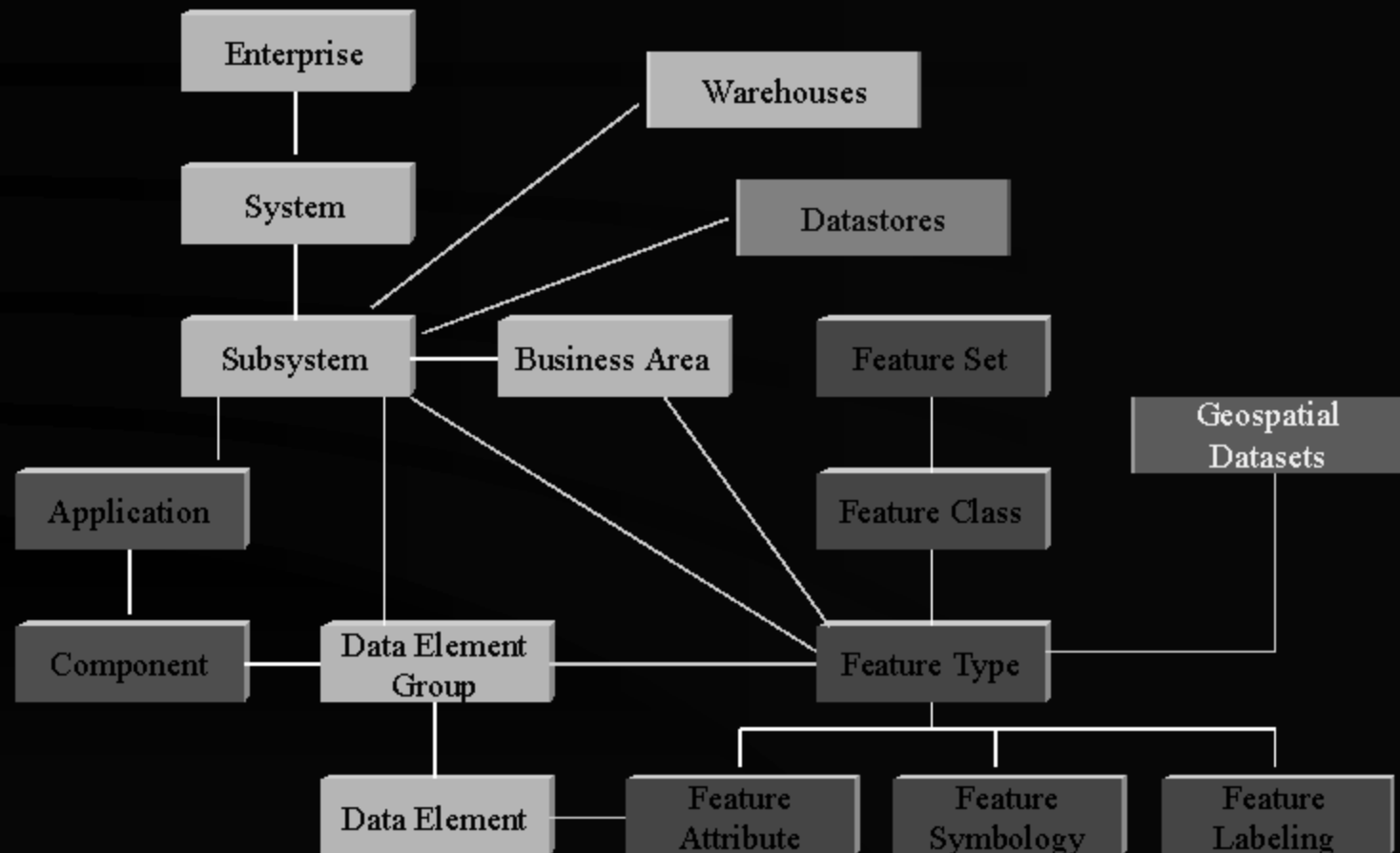
**Datastores**

**Geospatial Datasets**

- Metadata about operational datastores (of primary interest is geospatial datasets, but also accommodates other types such as relational)
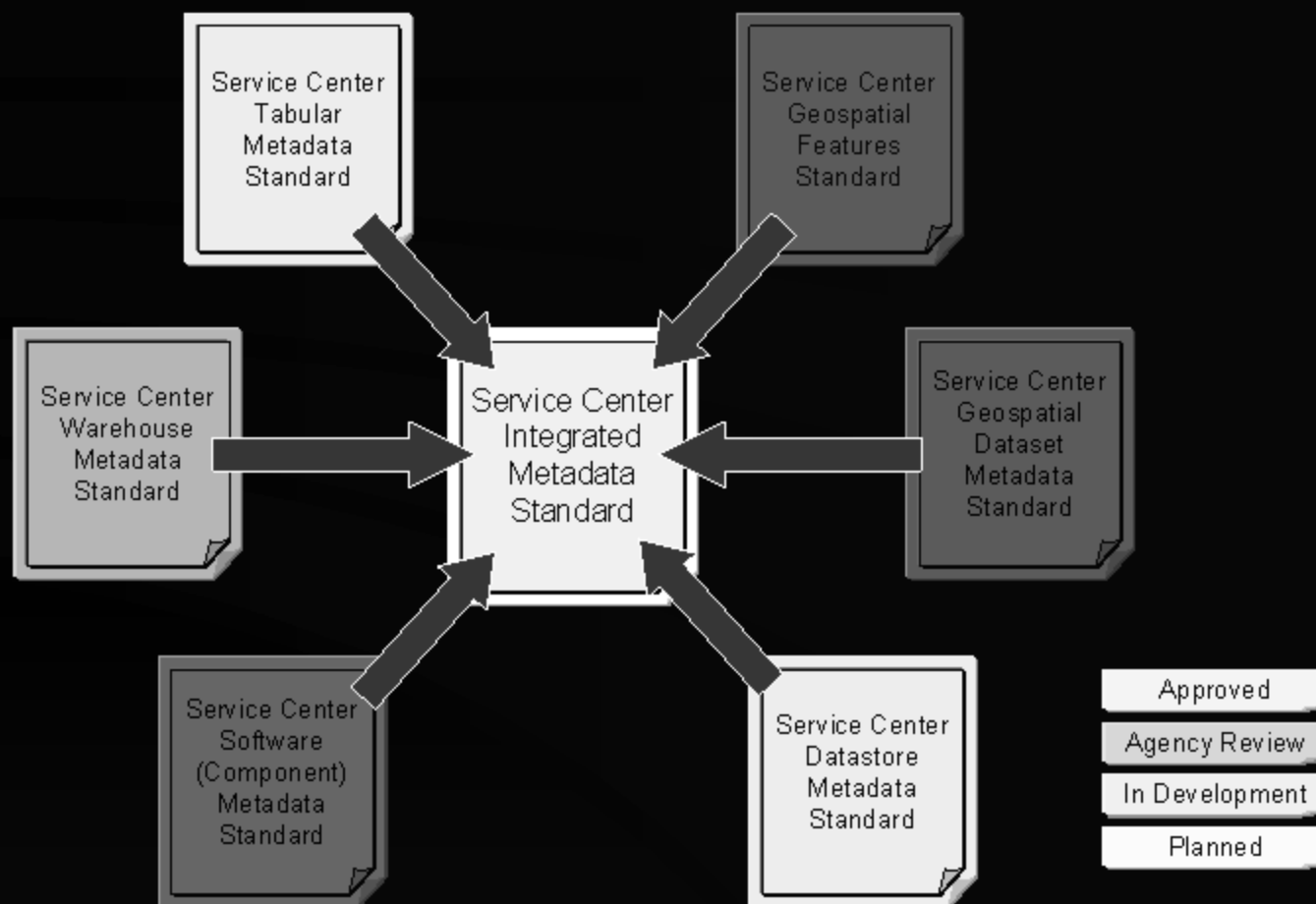
**Warehouses**
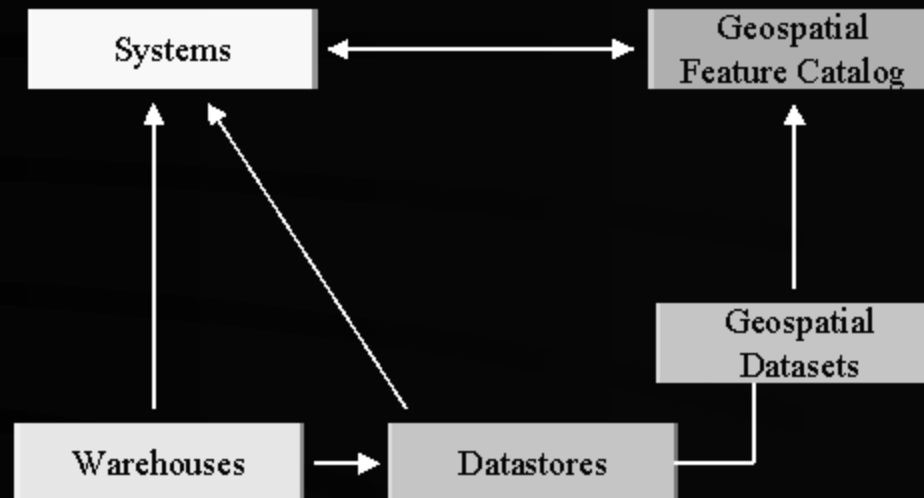
- Metadata to support Data warehouses

# Integrated Metadata Model

# Integrated Metadata Standards



Service Center Tabular Metadata Standard

Service Center Geospatial Features Standard

Service Center Warehouse Metadata Standard

Service Center Integrated Metadata Standard

Service Center Geospatial Dataset Metadata Standard

Service Center Software (Component) Metadata Standard

Service Center Datastore Metadata Standard

Approved

Agency Review

In Development

Planned

# Integrated Metadata



- Geospatial datasets are linked to geospatial feature and attribute metadata

- Geospatial features are linked to associated tabular metadata

- Systems are linked to geospatial features used by the system

- Datastores are linked to the owning system

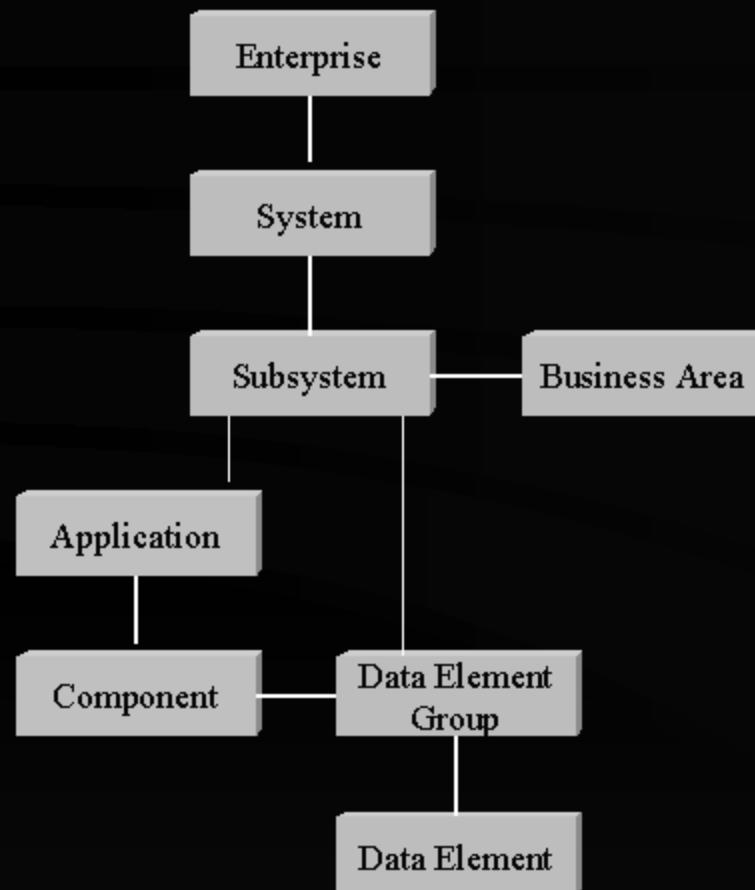- Warehouses are linked to the source systems and datastores

# Stewardship
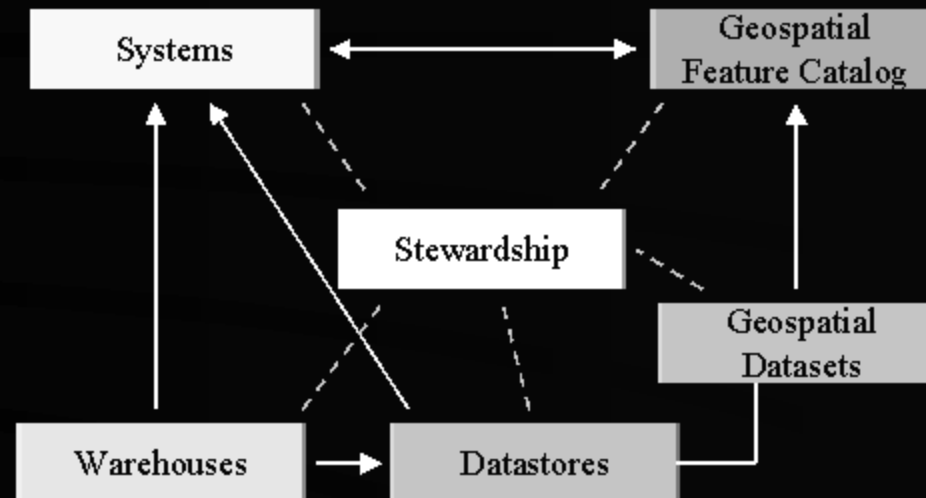


- Stewardship metadata is collected for items in all metadata categories
  - Systems, Geospatial Features, Datastores, Data Elements, etc.

- Stewards include those who are responsible for metadata, data, software
  - Executive Sponsors, Data Stewards, System Managers

# Metadata Standards

- Individual Metadata Standards
  - Defines standard for a given category of metadata
  - Based on industry (or other existing) standards where appropriate
  - Each approved as individual standard
- Integrated Metadata Standard
  - Defines metamodel for integrating all metadata categories
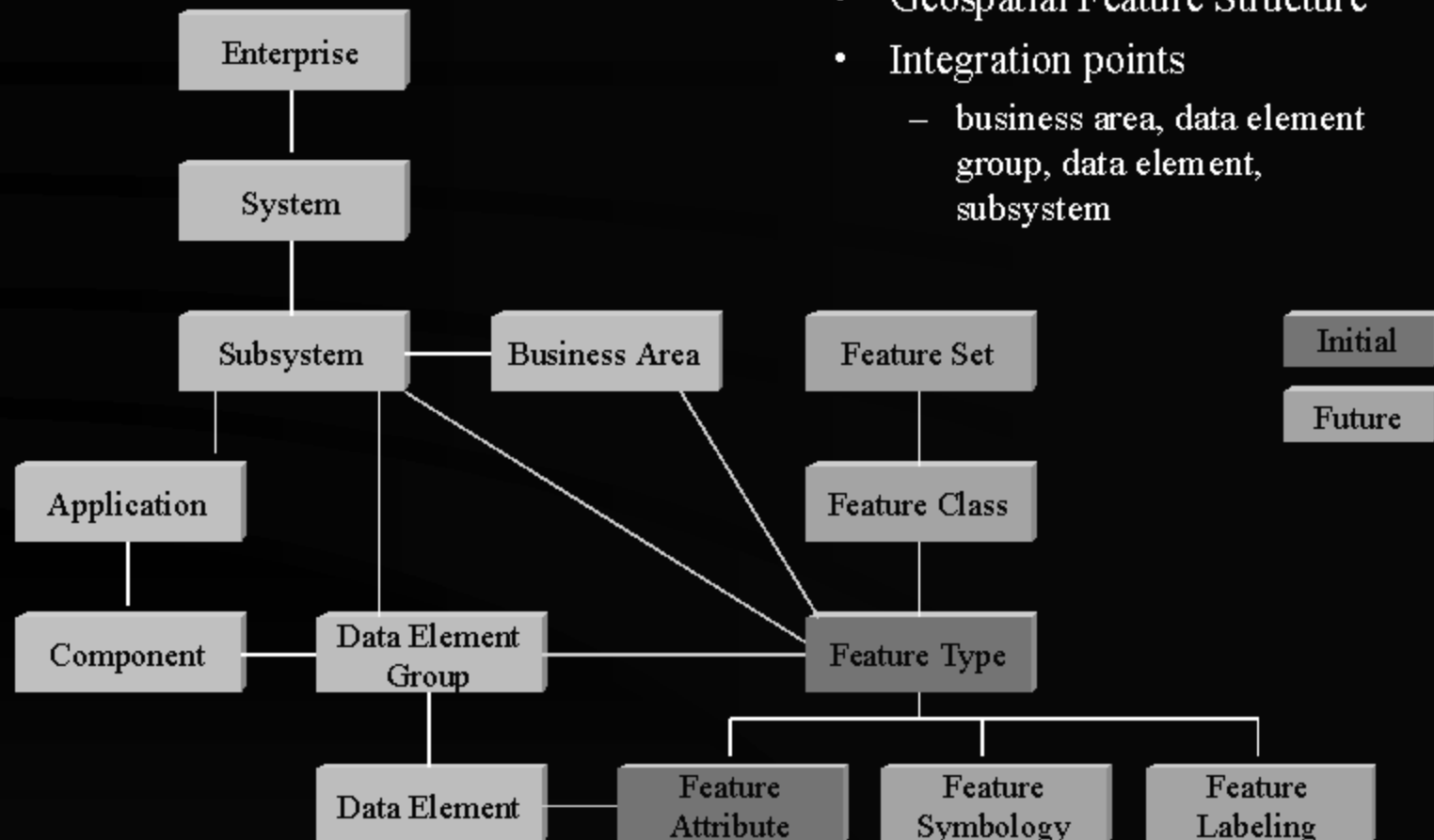  - Used by data team to define repository

# A Closer Look At Systems

```
        ┌──────────────┐
        │  Enterprise  │
        └──────┬───────┘
               │
        ┌──────┴───────┐
        │    System    │
        └──────┬───────┘
               │
        ┌──────┴───────┐      ┌──────────────┐
        │  Subsystem   │──────│ Business Area│
        └──┬────────┬──┘      └──────────────┘
           │        │
┌──────────┴──┐     │
│ Application │     │
└──────┬──────┘     │
       │            │
┌──────┴──────┐  ┌──┴───────────┐
│  Component  │──│ Data Element │
└─────────────┘  │    Group     │
                 └──────┬───────┘
                        │
                 ┌──────┴───────┐
                 │ Data Element │
                 └──────────────┘
```
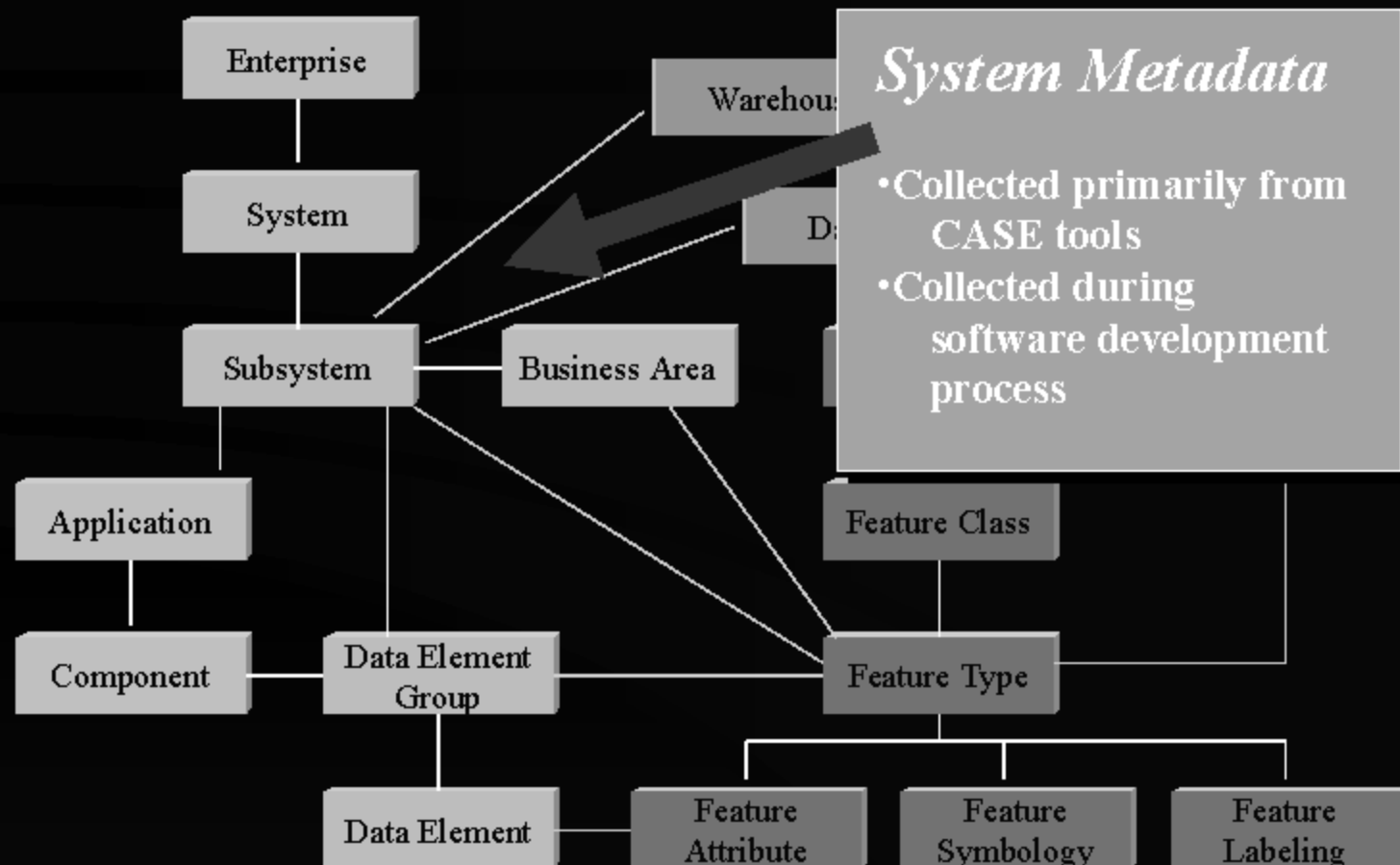
- Core system structure
  - Data dependencies
  - Central Repository - Phase I

- Add in software Metadata
  - Actual detail structure still under construction
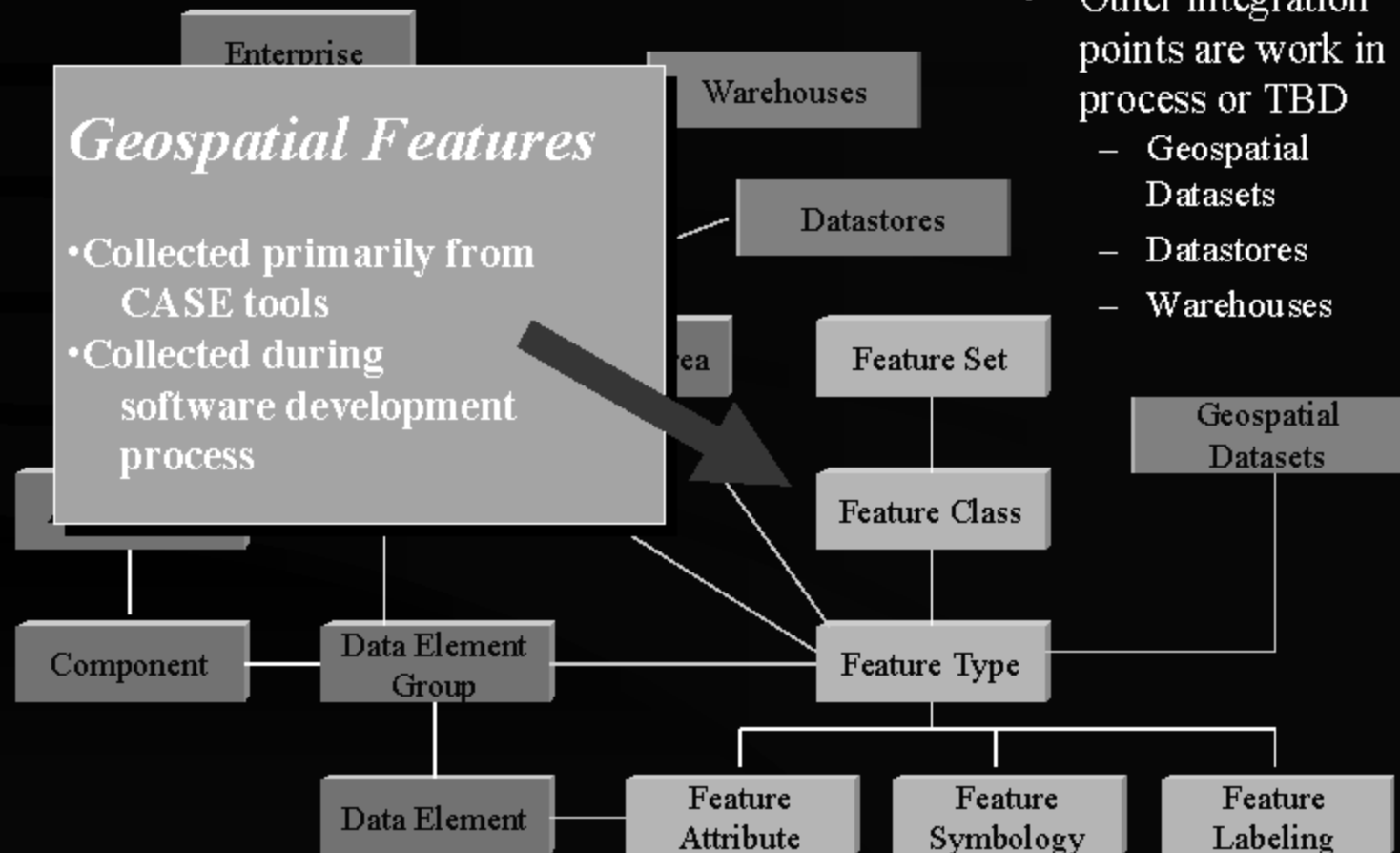
# Integrating Geospatial Features

- Geospatial Feature Structure
- Integration points
  - business area, data element group, data element, subsystem

# Data Collection Tools



Enterprise

System

Subsystem

Business Area

Warehou...

D...

**System Metadata**

- Collected primarily from CASE tools
- Collected during software development process

Application

Component

Data Element Group

Feature Class

Feature Type

Data Element

Feature Attribute

Feature Symbology

Feature Labeling

# Other Integration

Enterprise

Warehouses

## *Geospatial Features*

- Collected primarily from CASE tools
- Collected during software development process

Datastores

- Other integration points are work in process or TBD
  - Geospatial Datasets
  - Datastores
  - Warehouses

Feature Set

Geospatial Datasets

Feature Class

Feature Type

Component

Data Element Group

Data Element

Feature Attribute

Feature Symbology

Feature Labeling

# Collection Tools & Processes

- **Tabular Metadata**
  - Collected primarily from CASE Tools
  - Collected during software development process
- **Geospatial Feature Metadata** (feature types, attributes, symbology)
  - Tool evaluation/selection underway (FGDC/custom)
  - Collected during software development process
- **Geospatial Dataset Metadata** (FGDC)
  - Tool evaluation/selection underway
  - Collected as part of data stewardship process
- **Other Metadata**
  - Tools and collection processes still TBD

# USDA Service Center Metadata
## An Overview